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<div style="text-align: center;"> <p>Substitute for form 1449A/PTO</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p><i>(use as many sheets as necessary)</i></p> </div>				<i>Complete if Known</i>	
				Application Number	09/662,224
				Filing Date	September 14, 2000
				First Named Inventor	ALEXANDER
				Group Art Unit	3737
				Examiner Name	J. LIN
Sheet	1	of	7	Attorney Docket Number	6750-0007.01 (SU98-U01.US1)

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FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)			

Examiner Signature	<i>Teresa L</i>	Date Considered	10/14/03
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² See attached Kinds of U.S. Patent Documents.

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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
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JYL	C1	BASHIR et al., "Validation of Gadolinium-Enhanced MRI of GAG Measurement in Human Cartilage"			
	C2	BORTHAKUR et al., "In Vivo Triple Quantum Filtered Sodium MRI of Human Articular Cartilage"			
	C3	BRET et al., "Quantitative analysis of biomedical images," University of Manchester, Zeneca Pharmaceuticals, IBM UK, http://www.wiau.man.ac.uk/~ads/imv			
	C4	BUTTERWORTH et al., Depts of Biomedical Engineering, Medicine, Neurology, & Center for Nuclear Imaging Research, University of Alabama at Birmingham, USA			
	C5	CARANO et al., "Estimation of erosive changes in rheumatoid arthritis by temporal multispectral analysis"			
	C6	COHEN et al., "Knee cartilage topography, thickness, and contact areas from MRI: in-vitro calibration and in-vivo measurements," <i>Osteoarthritis and Cartilage</i> 7:95-109, 1999			
	C7	DARDZINSKI et al., "T1-T2 Comparison in Adult Articular cartilage," <i>ISMRM Seventh Scientific Meeting</i> , Philadelphia, PA, May 22-28, 1999			
	C8	DARDZINSKI et al., "Entropy Mapping of Articular Cartilage"			
	C9	DUFOUR et al., "A Technique for the Dynamical Evaluation of the Acromiohumeral Distance of the Shoulder in the Seated Position under Open-field MRI"			
	C10	ECKSTEIN et al., "Side differences of knee joint cartilage volume, thickness, and surface area, and correlation with lower limb dominance - an MRI-based study," <i>Osteoarthritis and Cartilage</i> 10: 914 - 921 (2002)			
	C11	ECKSTEIN et al., "New quantitative approaches with 3-D MRI: cartilage morphology, function and degeneration," Medical Imaging International, November-December, 1998			

Examiner Signature	<i>Joseph Lin</i>	Date Considered	10/14/03
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Sheet 3 of 7

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J/L	C12	ECKSTEIN et al., "Effect of gradient and section orientation on quantitative analyses of knee joint cartilage," <i>Journal of Magnetic Resonance Imaging</i> 11: 161 - 167 (2000)	
	C13	ECKSTEIN et al., "Functional analysis of articular cartilage deformation, recovery, and fluid flow following dynamic exercise in vivo," <i>Anatomy and Embryology</i> 200: 419 - 424 (1999)	
	C14	ECKSTEIN et al., "Effect of physical exercise on cartilage volume and thickness in vivo: an MR imaging study," <i>Radiology</i> 207: 243 - 248 (1998)	
	C15	FABER et al., "Quantitative Changes of Articular Cartilage Microstructure During Compression of an Intact Joint"	
	C16	FABER et al., "Gender differences in knee joint cartilage thickness, volume and articular surface areas: assessment with quantitative three-dimensional MR imaging," <i>Skeletal radiology</i> 30(3):144-150, 2001	
	C17	GHOSH et al., "Watershed Segmentation of High Resolution Articular Cartilage Images for assessment of OsteoArthritis"	
	C18	GLASER et al., "Optimization and validation of a rapid highresolution T1-w 3D Flash waterexcitation MR sequence for the quantitative assess-ment of articular cartilage volume and thickness," <i>Magnetic Resonance Imaging</i> 19: 177 --185 (2001)	
	C19	GOODWIN et al., "MR Imaging of Articular Cartilage: Striations in the Radial Layer Reflect the Fibrous Structure of Cartilage"	
	C20	GRAICHEN et al., "Three-dimensional analysis of the width of the subacromial space in healthy subjects and patients with impingement syndrome," <i>American Journal of Roentgenology</i> 172: 1081 - 1086 (1999)	
	C21	GANDY et al., "One-year longitudinal study of femoral cartilage lesions in knee arthritis", 1999	
	C22	HALL et al., "Quantitative MRI for clinical drug trials of joint diseases; Virtual Biopsy of articular cartilage"	

Examiner Signature	<i>James S.</i>	Date Considered	10/14/03
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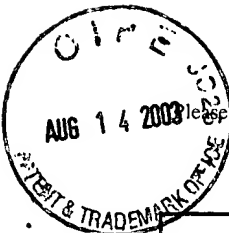
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Jyc	C23	HARDY et al., "The influence of the resolution and contrast on measuring the articular cartilage volume in magnetic resonance images," <i>Magn Reson Imaging</i> . 2000 Oct; 18(8):965-72	
	C24	HARDY et al., "Measuring the thickness of articular cartilage from MR images," <i>J. Magnetic Resonance Imaging</i> 13:120-126, 2001	
	C25	HARGREAVES et al., "MR Imaging of Articular Cartilage Using Driven Equilibrium," <i>Magnetic Resonance in Medicine</i> 42(4):695-703 (October 1999)	
	C26	HARGREAVES et al., "MR Imaging of Articular Cartilage Using Driven Equilibrium"	
	C27	HAUT et al., "A High Accuracy Three-Dimensional Coordinate Digitizing System for Reconstructing the Geometry of Diarthrodial Joints," <i>J. Biomechanics</i> 31:571-577, 1998	
	C28	HERBERHOLD et al., "In situ measurement of articular cartilage deformation in intact femoropatellar joints under static loading," <i>Journal of Biomechanics</i> 32: 1287 - 1295 (1999)	
	C29	HERBERHOLD et al., "An MR-based technique for quantifying the deformation of articular cartilage during mechanical loading in an intact cadaver joint," <i>Magnetic Resonance in Medicine</i> 39: 843 - 850 (1998)	
	C30	HIGH et al., "Early Macromolecular Collagen Changes in Articular Cartilage of Osteoarthritis (OA): An <i>In Vivo</i> MT-MRI and Histopathologic Study"	
	C31	HOHE et al., "Surface size, curvature analysis, and assessment of knee joint incongruity with MR imaging in vivo," <i>Magnetic Resonance in Medicine</i> , 47:554-561(2002)	
	C32	KAUFMAN et al., "Articular Cartilage Sodium content as a function of compression"	
	C33	KLOSTERMAN et al., "T ₂ Measurements in Adult Patellar Cartilage at 1.5 and 3.0 Tesla," <i>ISMRM Seventh Scientific Meeting</i> , Philadelphia, PA, May 22-28, 1999	

Examiner Signature	<i>Taylor</i>	Date Considered	10/14/03
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JYL	C34	KNAUSS et al., "Self-Diffusion of Water in Cartilage and Cartilage Components as Studied by Pulsed Field Gradient NMR," <i>Magnetic Resonance in Medicine</i> 41:285-292 (1999)	
	C35	KORHONEN et al., "Importance of the superficial tissue layer for the indentation stiffness of articular cartilage," <i>Med Eng Phys.</i> 2002 Mar;24(2):99-108	
	C36	KSHIRSAGAR et al., "Measurement of localized cartilage volume and thickness of human knee joints by computer analysis of three-dimensional magnetic resonance images," <i>Invest Radiol.</i> May;33(5):289-99, 1998	
	C37	LÜSSE et al., "Measurement of distribution of water content of human articular cartilage based on transverse relaxation times: an in vitro study"	
	C38	LÜSSE et al., "Measurement of distribution of water content of human articular cartilage based on transverse relaxation times: an in vitro study"	
	C39	MERKLE et al., "A transceive coil assembly for hetero-nuclear investigations of human breast at 4 T"	
	C40	MODEST et al., "Optical verification of a technique for in situ ultrasonic measurement of articular cartilage thickness," <i>J. Biomechanics</i> 22(2):171-176, 1989	
	C41	NIEMINEN et al., "T ₂ Indicates Incompletely the Biomechanical Status of Enzymatically Degraded Articular Cartilage at 9.4T"	
	C42	NISHII et al., "Three dimensional Evaluation of the acetabular and femoral articular cartilage in the osteoarthritis of the Hip joint"	
	C43	PARKKINEN et al., "A mechanical apparatus with microprocessor controlled stress profile for cyclic compression of cultured articular cartilage explants," <i>J Biomech.</i> 1989;22(11-12):1285-91	
J	C44	POTTER et al., "Sensitivity of Quantitative NMR Imaging to Matrix Composition in Engineered Cartilage Tissue"	

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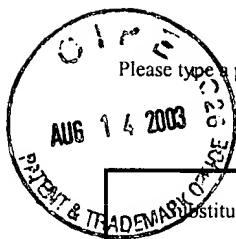
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JYL	C45	PROBST et al., "Technique for measuring the area of canine articular surfaces," <i>Am. J. Vet. Res.</i> 48(4):608-609, 1987	
	C46	Robarts Research Institute, Abstract #1028	
	C47	ROBSON et al., "A combined analysis and magnetic resonance imaging technique for computerized automatic measurement of cartilage thickness in distal interphalangeal joint," <i>Magnetic Resonance Imaging</i> 13(5):709-718, 1995	
	C48	SHAPIRO et al., "In-Vivo Evaluation of Human Cartilage Compression and Recovery using 1H and 23Na MRI"	
	C49	SOLLOWAY et al., "The use of active shape models for making thickness measurements of articular cartilage from MR images," <i>Magn Reson Med.</i> 1997 Jun;37(6):943-52	
	C50	STAMMBERGER et al., "A New Method for 3D Cartilage Thickness Measurement with MRI, Based on Euclidean Distance Transformation, and its Reproducibility in the Living"	
	C51	STAMMBERGER et al., "Elastic registration of 3D cartilage surfaces from MR image data for detecting local changes of the cartilage thickness," <i>Magnetic Resonance in Medicine</i> 44: 592-601 (2000)	
	C52	STAMMBERGER et al., "A method for quantifying time dependent changes in MR signal intensity of articular cartilage as a function of tissue deformation in intact joints," <i>Medical Engineering & Physics</i> 20:741-749, 1998	
	C53	VANDE BERG et al., "Assessment of knee cartilage in cadavers with dual-detector spiral CT arthrography and MR imaging," <i>J. Radiology.</i> 2002 Feb; 222(2):430-436	
	C54	VELYVIS et al., "Evaluation of Articular Cartilage with Delayed Gd(DTPA)2-Enhanced MRI: Promise and Pitfalls"	
J	C55	WARFIELD et al., "Automatic Segmentation of MRI of the Knee"	

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✓	C57	WARFIELD et al., "Adaptive, Template Moderated Spatially Varying Statistical Classification," <i>Medical Image Analysis</i> 4(1): 43-55, 2000	
✓	C58	WAYNE et al., "Measurement of articular cartilage thickness in the articulated knee," <i>ANN Biomed Eng.</i> 1998 Jan-Feb; 26(1):96-102	

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